BULEYSHVILI, D.A.; SIRADZE, K.F.

On the development of Mactridae in the upper Sarmatian of East Georgia. Dokl.AN SSSR 107 no.4:585-587 Ap '56. (MLRA 9:7)

1.Sektor paleobiologii Akademii nauk Gruz.SSR. Predstavleno akademikom N.S.Shatskim.
(Georgia--Lamellibranchiata fossil)

BULEYSHVILI, D.A.

Evaluation of oil-bearing prospects of Tertiary deposits in western Georgia. Geol.nefti 1 no.10:8-16 O '57. (MIRA 10:10)

1. Kompleksnaya ekspeditsiya Vsesoyuznogo nauchno-issledovatel'skogo geologo-razvedochnogo neftyanogo instituta.
(Georgia--Petroleum geology)

BULEYSHVILI, D.A.

Geological structure of the Georgian intermontane depression and its oil potential. Trudy VNIGRI no.111:293-351 '57. (MIRA 11:6)
(Georgia--Petroleum geology)

BULEYSHVILI, David Amvrosiyevich; KHAIN, V.Ye., doktor geol.-miner.nauk, nauchnyy red.; DAYEV, G.A., vedushchiy red.; FRUMKIN, P.S., tekhn.red.

[Geology, and oil and gas potentials of the intermountain depression in eastern Georgia] Pod red. V.E.Khaina. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, Leningr.otd-nie, 1960. 238 p. (MIRA 13:12)
(Georgia--Petroleum geology)
(Georgia--Gas, Natural--Geology)

BULEYSHVILI, D.A.; DZHAPARIDZE, G.V.

Geology, and oil gas potentials in the Tiflis region. Trudy VNIGNI no.15:52-65 '59. (MIRA 14:6)
(Tiflis region—Petroleum geology)
(Tiflis region—Gas, Natural—Geology)

TSAGARELI, A.I., akademik, glav. red.; BULEYSHVILI, D.A. red.; DZHANELIDZE, A.I., akademik, red.; DZOTSENIDZE, G.S., akademik red.; ZARIDZE, G.M., red.; ZESASHVILI, V.I., red.; RUBINSHTEYN, M.M., red ; GAMKRELIDZE, P.D., akademik, red.

[Problems of the geology of Georgia; for the 22d session of the International Geological Congress] Voprosy geologii Gruzii; k XXII sessii Mezhdunarodnogo geologicheskogo kongressa. Tbilisi, Izd-vo "Metsniereba," 1964. 477 p. (MIRA 18:3)

1. Akademiya nauk Gruzinskoy SSR, Tiflis. 2. Akademiya nauk Gruzinskoy SSR, Tiflis (for Gamkrelidze, Dzhanelidze, Dzotsenidze, TSagareli

BULEYSHVILI, F.A.; VAKHANIYA, Ye. K.

Stratigraphic scale of Tertiary sediments in Georgia. Trudy VNIGNI no.15:12-23 '59. (MIRA 14:6)
(Georgia—Geology, Stratigraphic)

BULEYSHVILI, Yasson Mikhaylovich; FEDOTOVSKIY, A.P., red.; SYCHEVA, V.A., tekhn. red.

[Can be gained from a square meter in greenhouses] Chto mozhno poluchit' s kvadratnogo metra zemli v teplitsakh. Murmansk, Murmanskoe knizhnoe izd-vo, 1962. 41 p. (MIRA 17:2)

1. Glavnyy agronom podsobnogo khozyaystva "Industriya", Murmanskaya oblast' (for Buleyshvili).

BULEWICZ-BURLINSKA, Liliana

Remarks on ceramic and fire-resisting clays in Lower Silesia.
Kwartalnik geol 5 no.4:983 '61.

1. Dolnoslaska Stacja Terenowa, Instytut Geologiczny, Warszawa.

BUL'F, B.K.

Ternary metallic compounds. Usp. khim. 29 no.6:774-795 Je '60.
(MIRA 13:6)

1. Voyenno-vozdushnaya inzhenernaya akademiya imeno. N. Ye. Zhukovskogo.
(Metals)

L 47450-66 EWT(d)/EWT(m)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(1) IJP(c) JD

ACC NR: AP6014443 SOURCE CODE: UR/0125/65/000/012/0068/0069

AUTHORS: Khrenov, K. K.; Bulyga, A. F.

5 b
e

ORG: none

TITLE: Air-plasma cutting of metals 16

SOURCE: Avtomaticheskaya svarka, no. 12, 1965, 68-69

TOPIC TAGS: plasma cutting, stainless steel, volt ampere characteristic, tungsten / 1Kh18N9T stainless steel

ABSTRACT: The results of tests of Ye. O. Paton's method for plasma cutting of metals with the use of inexpensive and plentiful gases are given. The apparatus has a power of about 40 kW (see Fig. 1). The tests were made with 1Kh18N9T steel (see Fig. 2). The preliminary tests showed that the use of compressed air for plasma cutting can be most economical and universal, since it competes successfully with all known methods of metal cutting. Research for increasing the power of the apparatus is being continued.

Card 1/2 UDC: 621.791.94.03

L 47450-66

ACC NR: AP6014441

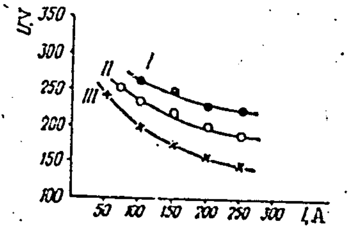


Fig. 1. Volt-ampere characteristics of apparatus. Average air consumption: I - 7 m^3/hr; II - 6.3 m^3/hr; III - 5.6 m^3/hr

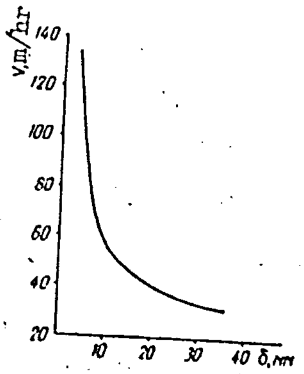


Fig. 2. Speed of air-plasma cutting of 1Kh18N9T steel, as a function of sheet thickness

Orig. art. has: 2 graphs and 2 photographs.

SUB CODE: 11, [illegible] SUBM DATE: none

Card 2/2 mjs

BULGACH, A., inzh.; BAYKOV, A., arkhitektor

Automobile service station. Avt.dor. 24 no.6:25-26 Je '61.
(MIRA 14:7)

(Service stations)

SUDZHANIN, I.A.; [illegible], D.T.; [illegible], A.S.

Modernizing semibunkers for storing cement and mineral fines. Avt.dor. 24 no.9:13-16 S '61. (MIRA 14:10)
(Cement--Storage)

ACC NR: AP7005600 (A) SOURCE CODE: UR/0413/67/000/002/0037/0037

INVENTOR: Ogiyevich, V. A.; Belov, V. A.; Bulgach, A. S.; Mayorchuk, A. Z.; Rusanov, N. T.; Titov, M. A.; Khmelevskiy, V. N.

ORG: None

TITLE: An installation for mixing and laying concrete directly on roads or airfield aprons. Class 19, No. 190399 [announced by the All-Union Scientific Research Institute of Construction and Road Machinery (Vsesoyuznyy nauchno-issledovatel'skiy institut stroitel'nogo i dorozhnogo mashinostroyeniya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 37

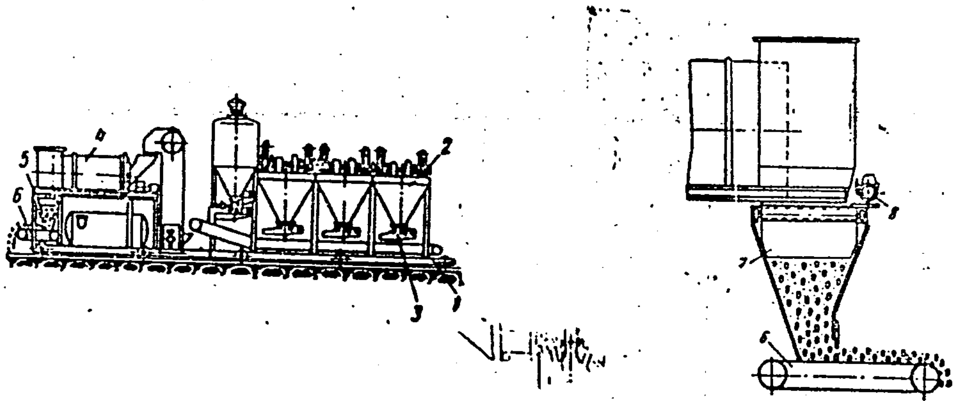
TOPIC TAGS: concrete, runway construction, highway construction, construction machinery, airfield maintenance equipment

ABSTRACT: This Author's Certificate introduces an installation for mixing and laying concrete directly on roads or airfield aprons. The unit includes a self-propelled undercarriage on which are mounted mechanisms for receiving, charging, feeding, batching and mixing the concrete components. The device also contains a mechanism for laying the concrete, including a distributive hopper and a belt-conveyor feeder. Provision is made for relating the feed rate of this conveyor mechanism to the forward velocity of the installation and also for distributing the concrete mixture uniformly with respect to the width of the strip being laid. The belt-conveyor feeder has a chain-and-plate speed regulator and guides are mounted in the upper section of the

Card 1/2 UDC: 693.546.2.002.5

ACC NR: AP7005600

distributive hopper with a reciprocating shaker block.



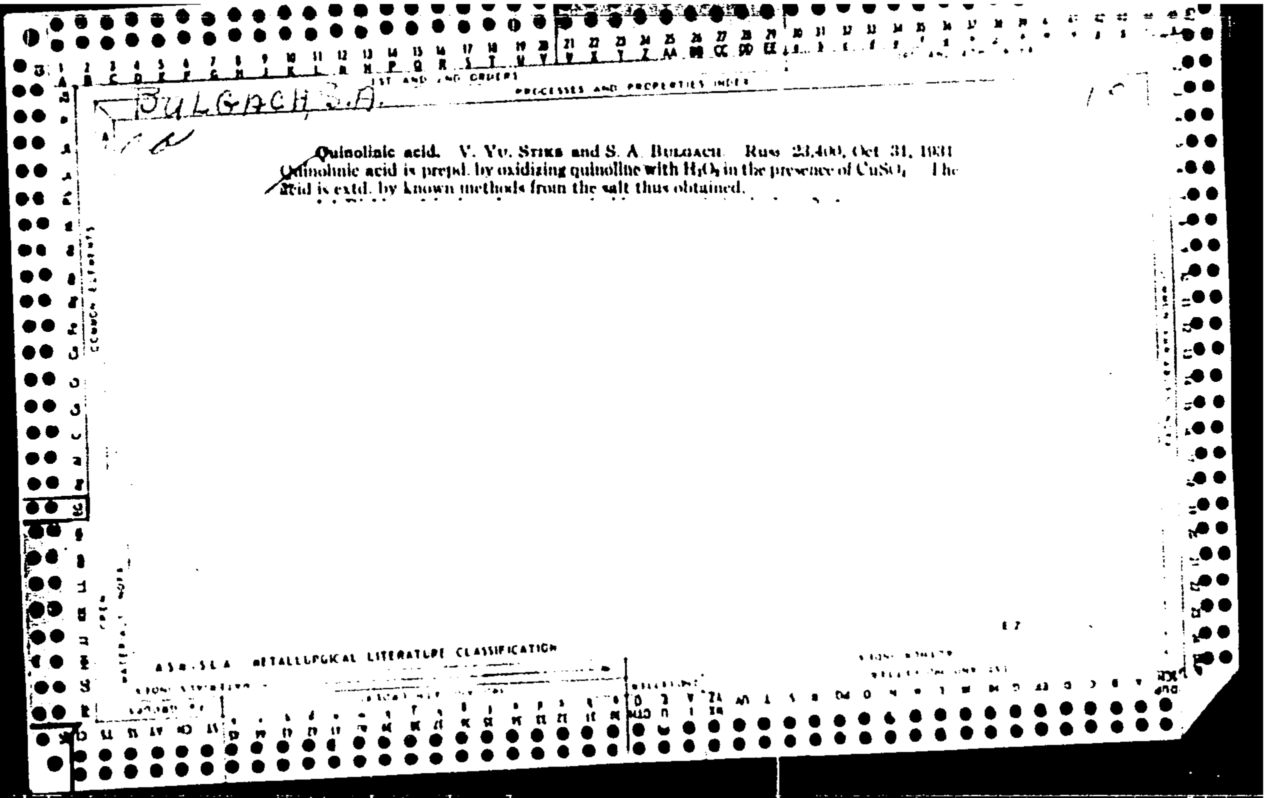
1--self-propelled undercarriage; 2--receiving mechanism; 3--batching mechanism; 4--mixing mechanism; 5--distributive hopper; 6--belt-conveyor feeder; 7--shaker block; 8--speed regulator

SUB CODE: 13/, SUBM DATE: 10Aug65
11/

Card 2/2

BULGACH, A.S., inzh.

Equipment for preparing additives for a concrete mix. Avt. dor. 28 no.4:24-25 Ap '65. (MIRA 18:5)



1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BULGACH, S.A.

Quinolinic acid. V. Yu. Stiks and S. A. Bulgach. Russ 23,400, Oct 31, 1931. Quinolinic acid is prepd. by oxidizing quinoline with H_2O_2 in the presence of $CuSO_4$. The acid is extd. by known methods from the salt thus obtained.

BULGACH, S.A.

1D

PROCESSES AND PROPERTIES INDEX

α-**Phenylbutyric acid.** S. A. Bulgach and A. A. Chervyakova. Russ. 52,092, April 30, 1938. The water-insol. liquid by-product obtained in the prepn. of ethylphenylbarbituric acid by condensation of ethylphenylmalonic ester with urea is treated with a soln. of alkali, then acidified. The pptd. α-phenylbutyric acid is purified in the usual manner.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

BULGACH, S.A.

10

CA

COMMON ELEMENTS

Sulfanilamide. S. A. Bulgach. U.S.S.R. 64,756, May 31, 1945. The Ac deriv. of sulfanilamide is sapond. with slaked lime in an aq. medium at 110-20° under 1.5 atm. Under these conditions the Ac group is split off and Ca sulfanilamide is formed. Addn. of HCl, AcOH, or a soln. of NH_4Cl liberates sulfanilamide from its salt. M. Hosch

OPEN

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

MATERIALS INDEX

3RD AND 4TH ORDERS

2ND LETTER

1ST AND 2ND LETTER

BULGACH, S. A.

Lactic Acid

Making production of iron lactate more efficient. Med. Prom. No. 3, 1952.

9. *Monthly List of Russian Accessions*, Library of Congress, August 1953, Uncl.

89712

1.2300

S/125/60/000/012/005/014
A161/A030

AUTHORS: Alov, A.A.; Bulgachev, Ye.A.

TITLE: The Formation of Cast Core in Spot and Roller Welding

PERIODICAL: Avtomaticheskaya svarak, 1960, No. 12, pp. 37 - 45

TEXT: Resistance in contact is considered by some authors to be the determining factor for the formation of the cast metal core, but A.S. Gel'man, G.F. Skakun and other authors (Refs. 2,3) proved that in soft welding process the core is formed through the internal resistance in parts. The investigation described has been carried out to check the effect of contact resistance. Bronze plates 0.1 + 0.1 mm thick and 0.1 + 0.01 + 0.01 + 0.1 mm were welded by the same welding process in a TKM-4 (TKM-4) welder, and current was also passed through one 0.2 mm plate. No significant difference in the core size could be found, which proves that the effect of contact resistance on the total heat quantity is negligible. It is obvious that all current streams through the microscopic surface protrusions in contact, fusing them instantaneously, the contact surface grows rapidly and the density of current drops. The core formation had been observed in models (Ref. 5) from alloy steel and photographed by high-speed camera, the observed

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S/125/60/000/012/005/014
A161/A030

The Formation of Cast Core in Spot and Roller Welding

maximum heat distribution is shown (Fig. 2) (concentrated heat area marked by hatching gradually takes on the shape of cast iron in spot welding). In the rigid process the current flow time and heat take-off are brief, and parts heat in a meniscus area (Fig. 2,б and Fig. 3). In the soft process, fusion starts in the center of heated zone, then the resistance in the liquid metal increases and the current density rises on the outside of it, the growth of the core stops when the resistance of cold metal around it rises due to the longer current path, and the core forms finally (Fig. 4). Thus there are basically two core formation modes (Fig. 2б,в). The conceptions of the "rigid" and "soft" welding process are not clearly defined, but "soft" may be considered to be when heat take-off is high and determines the place and shape of the core, and "rigid" when heat take-off is insignificant and current density distribution forms the core. The "soft" process is quiet, the "rigid" very brisk and with fusion in the spot of closest contact, and frequently with a distorted core in random places, or the thin part fuses through a too restricted contact area and the metal is spattered. This applies to "rigid" welding of parts of any thickness and combinations (but not above 1/3 ÷ 1/5). The core formation can be controlled, e.g., using a relief. When parts are of different thickness, it is better to make the relief on the thicker part

S/125/60/000/012/005/014
The Formation of Cast Core in Spot and Roller Welding A161/A030

and to insulate the adjacent surface (Fig. 8) in order to maintain high current
density in the required spot. The current passage may be maintained 10 ÷ 30 times
longer when a relief with insulation is used, and the process is quiet. It is re-
commended to use (Fig. 8) $\delta = (4 \div 6)a$; $b = (1.5 \div 2)\delta$; $h = (0.1 \div 0.4)a$. The in-
sulating layer thickness must be $(0.8 \div 1)$ h. Heat resistant enamel, or oxide
films, or other material may be used for insulation; in the experiments it was
mica fixed with БФ-2 (BF-2) glue. A 1Х18Н9Т (1Kh18N9T) steel plate of 0.2 mm
thickness had been successfully welded by a roller seam to a massive 15 mm deep
part with the use of such an insulated relief. An insulated relief may also be
used for welding parts of high thickness (same or different). There are 8 figures
and 5 Soviet references.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Aviation Technology Institute)

SUBMITTED: March 7, 1960

Card 3/7

89712

The Formation of Cast Core in Spot and Roller Welding S/125/60/000/012/005/014
A161/A030

Figure 2: Shape and place of maximum heat area (hatched) at different moments of current passage.

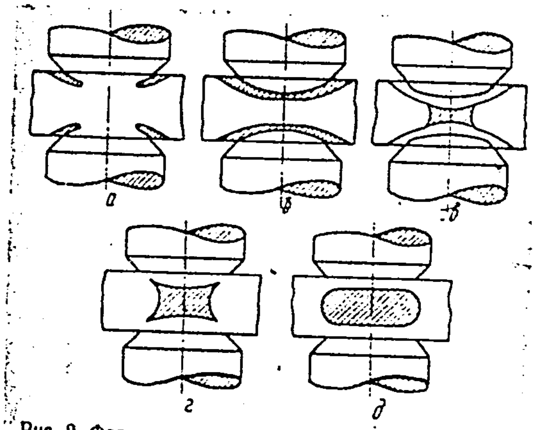

Рис. 2. Форма и расположение зоны максимального нагрева (заштриховано) в различные моменты протекания тока.

89712

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The Formation of Cast Core in Spot and Roller Welding A161/A030

Figure 3: Macrograph of cast iron formed with current passed through one 1.35 mm bronze plate ("rigid" process, TKM-4 welder): total capacitors capacity 400 microfarad; capacitor voltage 600 volts; transformation coefficient 75; pressure on electrodes 18 kg, contact surface diameter on electrodes 1.5 mm (x 140)

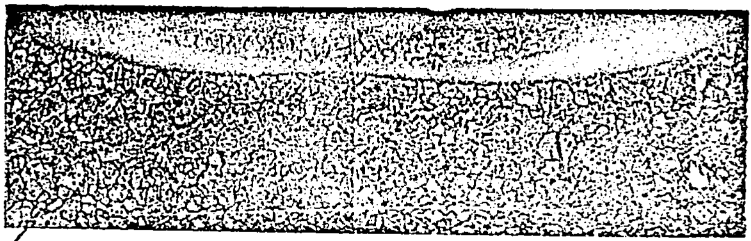

Рис. 3. Макрошлиф литого ядра, полученного при пропускании тока через одну деталь толщиной 1,35 *мм* из бронзы Бр. Б-2,5 (жесткий режим).
Режим сварки (машина ТКМ-4):
емкость конденсаторов — 400 *мкф*, напряжение на конденсаторах — 600 *в*, коэффициент трансформации — 75, усилие на электродах — 18 *кг*, диаметр контактной поверхности электродов — 1,5 *мм* (× 140).

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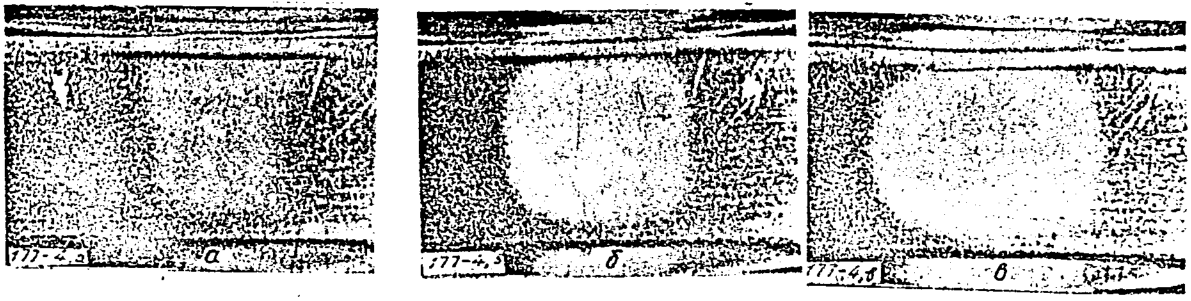
The Formation of Cast Core in Spot and Roller Welding A161/A030

Figure 4:

Core formation stages in "soft" process at $\frac{d}{\delta} \approx 1.2$ (Model, enlarged from film; t - the current passage time): a-30% t;
δ -60%t; β -100%t.



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S/125/60/000/012/005/014
The Formation of Cast Core in Spot and Roller Welding A161/A030

Figure 8:

Relief with insulation on thicker part. (Insulation hatched).

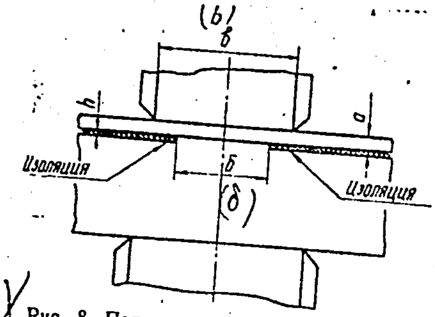

Рис. 8. Поперечное сечение рельефа на толстой детали с изоляцией.

Card 7/7

BULGADAYEV, A. V.

BULGADAYEV, A. V. - "Investigation of the Connection Between the Force of Static Friction and Elementary Forces Orginating in Small Displacements of Contiguous Surfaces." Sub 26 May 52, Physics Inst imeni P. N. Lebedev, Acad Sci USSR. (Dissertation for the Degree of Candidate in Physicomathematical Sciences).

SO: Vechernaya Moskva January-December 1952

BULGADAYEV, A.V.

USSR/Physics - Friction

Card : 1/1 Pub. 22 - 13/48

Authors : Bulgadaev, A. V.

Title : Studying the relationship between friction force and the "elementary forces."

Periodical : Dok. AN SSSR 97/5, 805 - 808, August 11, 1954

Abstract : Relationship between frictional forces at rest and the so-called "elementary forces" were studied and the results are described. Tangential forces formed by frictional surfaces are called elementary forces. Two references (1939-1951). Graphs.

Institution : Physical Institute im. P. N. Lebedev of the Acad. of Scs. of the USSR

Presented by : Academician M. A. Leontovich, April 5, 1954

S/278/63/000/002/001/003
A052/A126

AUTHOR: Bulgadayev, A. V.

TITLE: On the possibility of using an interference microscope for the measurement of oscillation amplitudes of thin plates (of telephone diaphragm type)

PERIODICAL: Referativnyy zhurnal, Tochnaya mekhanika, optika i ispytatel'naya apparatura, no. 2, 1963, 13, abstract 2.40.99 (Uch. zap. Buryatsk. gos. ped. in-t, no. 22, 1961, 13 - 16)

TEXT: The lack of information relating to the use of light interference in the measurement of oscillation amplitudes of thin elastic plates is pointed out. A case of interference on an equivalent air wedge is analyzed and an expression is derived for the oscillation of rays interfering on the wedge in the case when a parallel monochromatic light beam falls on the wedge perpendicular to its edge. The conclusion is drawn on the possibility of using an oscillating diaphragm with a varying oscillation amplitude as a second edge for periodically washing off and producing interference maxima and minima. This assumption was

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S/278/63/000/002/001/003
A052/A126

On the possibility of using an...

checked on an experimental installation consisting of a microinterference microscope, of an ordinary telephone the diaphragm of which served as a second mirror of the interferometer, and of an audio frequency oscillator. There are 1 figure and 3 references.

Z. Varshavskaya

[Abstracter's note: Complete translation]

Card 2/2

BULGADAYEV, A.V.

Basic problems of science and our tasks. Krat.soob. BKNII
no.3:3-16 '62. (MIRA 16:5)
(Communism and science)

BULGADAYEV, A.V.; KHOMYAK, Ye.M.

Experiments with microwaves. Priroda 53 no.6:112-113 '64.
(MIRA 17:6)

1. Buryatskiy kompleksnyy nauchno-issledovatel'skiy institut Sibirskogo otdeleniya AN SSSR, Ulan-Ude.

BULGADAYEV, A.V.

Shearing elasticity of thin boundary films of volatile substances.
Koll. zhur. 27 no.2:165-166 Mr-Ap '65. (MIRA 18:6)

1. Buryatskiy kompleksnyy nauchno-issledovatel'skiy institut,
Ulan-Ude.

L 43861-65 EPF(n)-2/EPR/EWG(v)/EPA(w)-2/EWT(l)/EWT(m)/EWP(k)/EWP(i)/EWP(b)/EWP(e)
Pe-5/Pq-4/Ps-4/Pu-4 GG/WH/WW
ACCESSION NR: AP5006851 S/0020/65/160/004/0799/0802 43
42
B

AUTHOR: Bazaron, U. B., Deryagin, B. V. (Corresponding member AN SSSR); Bulgadayev, A. V.

TITLE: Shear elasticity of boundary layers of liquids 21

SOURCE: AN SSSR. Doklady, v. 160, no. 4, 1965, 799-802

TOPIC TAGS: liquid state, liquid film, shear elasticity, shear modulus, mineral oil, castor oil, oleic acid

ABSTRACT: The research reported in this article is a sequel to earlier work by one of the authors (Deryagin, DAN 101, no. 2, 289, 1955 and others), where it was shown that thin films of liquids bordering on a solid can have special properties not possessed by the bulk liquid. In this investigation, the shear elasticity of a liquid was investigated by an ultrasonic method using an X-cut quartz resonator in the form of a rectangular slab. This method was used earlier by one of the authors (Bulgadayev, Uch. zap. Buryatsk. gos. ped. inst., Ulan-Ude, v. 15, 1958) to observe shear elasticity in some liquids. The method consists essentially of determining the shift in the resonant frequency of the quartz when its side

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L 43861-65

ACCESSION NR: AP5006851

2

surface is brought in contact with another solid by the liquid film. The idea of the method is illustrated in Fig. 1 of the Enclosure. An expression is derived for the relative shift in the resonant frequency in terms of the shear modulus of the film, the contact area, the mass of the quartz, and the thickness of the film. Plots are presented of the frequency shift against the reciprocal of the film thickness for mineral oil, castor oil, and oleic acid, for which the values obtained for the shear modulus from these results are 3.8×10^5, 2.4×10^6, and 4.2×10^5 dyne/cm^2, respectively. Some extraneous phenomena observed for castor oil and oleic acid at small thicknesses and large oscillations are briefly explained. Orig. art. has: 4 figures and 3 formulas.

ASSOCIATION: Buryatskiy kompleksnyy nauchno-issledovatel'skiy institut Sibirskogo otdeleniya Akademii nauk SSSR (Buryatsk Comprehensive Scientific Research Institute, Siberian Department, Academy of Sciences SSSR); Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 17Aug64 ENCL: 01 SUB CODE: ME

NR REF SOV: 009 OTHER: 001

Card 2/3

ACC NR: AP6036046 SOURCE CODE: UR/0056/66/051/004/0969/0982

AUTHOR: Bazaron, U. B.; Deryagin, B. V.; Bulgadayev, A. V.

ORG: Buryat Scientific Research Institute for Comprehensive Studies, Siberian Department, Academy of Sciences SSSR (Buryatskiy kompleksnyy nauchno-issledovatel'skiy institut Sibirskogo otdeleniya Akademii nauk SSSR); Institute of Physical Chemistry, Academy of Sciences SSSR (Institut fizicheskoy khimii Akademii nauk SSSR)

TITLE: Measurement of the shear elasticity of fluids and their boundary layers by a resonance method

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 4, 1966, 969-982

TOPIC TAGS: shear modulus, shear stress, liquid property, elasticity theory, boundary layer, viscous fluid

ABSTRACT: This is a continuation of earlier work by one of the authors (Deryagin, ZhFKh v. 3, 1, 1932) in which it was shown that thin layers of water between two glass surfaces have a measurable shear modulus. The present article is devoted to the development of a method of measuring such a shear modulus more precisely, at very small shear deformation amplitudes and at higher frequencies. Another purpose was to detect and measure the modulus for films considerably thicker than the boundary layers yet thin enough so that negligible damping of the shear waves occurs within them. The change in the resonance frequency of a piezoelectric quartz crystal, induced by the

Card 1/2

ACC NR: AP6036046

presence of a liquid film on a crystal face under a quartz cover plate, is measured for very small vibration amplitudes. For low-viscosity liquids (water and benzene) the shear modulus is found to be of the order of 10^4 - 10^5 dyne/cm^2. With increase in the crystal vibration amplitude, the effective shear modulus decreases and the relative influence of the dissipative forces increases. For nonpolar liquids, the shear modulus remains unchanged at all distances from the quartz surface, whereas for polar liquids (water, alcohol, etc.) it increases sharply upon approaching to within 600 - 900 Å of the surface. The shear modulus for very thin water films is found to be in qualitative agreement with the earlier measurements. The construction of the quartz crystal and the experimental procedure are described in detail. The theory of the method and the appropriate calculations are given. The results demonstrate that volume shear elasticity exists in all liquids and can be measured by this method. It is concluded that the thin boundary layers of polar liquids possess special mechanical properties that result from a higher degree of molecular ordering than in the interior of the liquids. Orig. art. has: 10 figures, 16 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 06Dec65/ ORIG REF: 019/ OTH REF: 002

Card 2/2

BULGADAYEVA, R. V.

Characteristics of the process of soil nitrification in the Angara Valley. Izv.Sib.otd.AN SSSR no.7:111-115 '60.
(MIRA 13:8)

1. Vostochno-Sibirskiy filial Sibirskogo otdeleniya AN SSSR.
(Angara Valley--Nitrification)

GOLOVKIN, V.P., inzh.; BULGAK, Ye. V., inzh.

Scraper winch. Put' i put. khoz. no. 7:14 Jl '58. (MIRA 11:7)
(Winches)

GOLOVKIN, V.P., inzh.; BULGAK, Ye.V., inzh.

Equipment for automatic lifting of blades and blade coverings of snowplows. Put' i put. khoz. no.3:38 Mr '59. (MIRA 12:6)

(Railroads--Equipment and supplies)
(Railroads--Snowplows)

GARKUSHA, I.F., professor; BULGAKAY, N., redaktor; IVANOU, V., redaktor;
STSYAPANOVA, N., tekhnicheskiy redaktor

[Soil science] Hlebaznaustva. Minsk, Dziarzh. vyd-va BSSR, 1955.
417 p. (MLRA 10:2)
(Soils)

BULGAKBAYEV, A.; YEGOROV, D.A.

[Collection of the laws of Kazakhstan, and the decrees of the Presidium of the Supreme Soviet of the Kazakh S.S.R. (1938-1957)] Sbornik zakonov Kazakhskoi SSR i ukazov Prezidiuma Verkhovnogo Soveta Kazakhskoi SSR (1938-1957). Sbornik sost. A.Bulgakbaev i D.A.Egorov. Red.A.Bulgakbaev. Alma-Ata, Kazakhskoe Gos.izd-vo, 1958. 669 p. (MIRA 13:4)

1. Kazakh S.S.R. Laws, statutes, etc. (Kazakhstan--Law)

BULGAKOFF, S.

TECHNOLOGY

Periodicals: METALURGIA SI CONSTRUCTIA DE MASINI. Vol. 10,no.6, June 1958

BULGAKOFF, S. Development of the petroleum-equipment industry in the last ten years. p. 509

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 2,
February 1959, Unclass.

BULGAKOFF, Sergiu

Advanced technology and the increase of labor productivity. Probleme econ 16 no.12:17-29 D '63.

1. Prim-vicepresidinte al Comitetului de Stat al Planificarii.

BULGAKOV, A.

High principles and ability to organize are the paramount factors in trade union activity. Sov.profsoiuzy 7 no.23: 3-7 D '59. (MIRA 12:12)

1. Sekretar' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(Trade unions)

BULGAKOV, A.A.

Struggle for the seven-year plan. Izobr. i rats. no.11:2-4 N '60.
(MIRA 13:10)

1. Sekretar' Vsesoyuznogo tsentral'nogo soveta porfsoyuzov.
(Technological innovations)

BULGAKOV, A.

Toward further increase in trade-union work. Sov. profsoiuzy 16 no.14:8-13 Jl '60. (MIRA 13:8)

1. Sekretar' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(Trade unions)

BULGAKOV, A.

Give trade-union workers unremitting attention. Sov.profsoiuzy 17
no.11:3-6 Je '61. (MIRA 14:5)

1. Sekretar' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(Trade Unions--Officers)

BULGAKOV, A.

For a better training and education of trade-union personnel and activist groups. Sov.profsoiuzy 18 no.10:2-4 My '62.
(MIRA 15:5)

1. Sekretar' Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov.

(Trade unions--Officers)

PEREVOSHCHIKOVA, K.A.; BELOUSOV, A.P.; SHLIDYAYEVA, [illegible]

Action of liver ribonucleic acid on the growth of tumors in experimental animals. Biul. eksp. biol. i med. 60 no.8:102-105 Ag '65. (MIRA 18:9)

1. Biokhimicheskaya laboratoriya (zav. - doktor biolog. nauk A.P. Belousov) Onkologicheskogo instituta imeni Gertsena (dir. - doktor med. nauk prof. A.N. Novikov), Moskva.

L 4423-66 EWT(1)/EWA(h) JM

ACC NR: AP5026711

SOURCE CODE: UR/0141/65/008/005/0955/0964

AUTHOR: Borodovskiy, P. A.; Buldygin, A. F.

41
B

ORG: Institute of Semiconductor Physics, SO AN SSSR (Institut fiziki poluprovodnikov SO AN SSSR)

TITLE: Experimental study of a coaxial traveling-wave strophotron

SOURCE: IVUZ. Radiofizika, v. 8, no. 5, 1965, 955-964

TOPIC TAGS: electron beam, electronic amplifier, electron oscillation, traveling wave, traveling wave amplifier, traveling wave tube

25

ABSTRACT: Operation of a coaxial traveling-wave strophotron both as an oscillator and amplifier is described. A section of the experimental tube is shown in Fig. 1. The interelectrode distance is about 110 mm; with a magnetic field of 2500 gs and impressed voltage of 1500 v, there are approximately 40 oscillations of an electron traversing the working space. Oscillation occurs at a beam current greater than some critical value; below this value, amplification is obtained. In the oscillatory mode, changing the applied voltage from 900 to 1900 v resulted in a relatively small frequency change, from 1000 to 1200 Mc; maximum power output was about 0.8 w.

Card 1/2

UDC: 621.385.622

L 4423-66

ACC NR: AP5026711

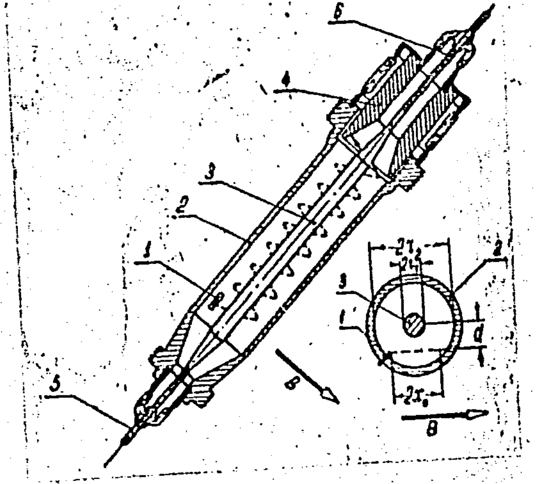

Fig. 1. Traveling-wave strophotron

1 - Cathode (tungsten); 2 - repeller (Cu); 3 - accelerator (Cu); 4 - collector; 5,6 - outputs.

Experimental and theoretical performance characteristics for various magnetic and electric field combinations are included. Orig. art. has: 9 figures and 6 formulas. [SH]

SUB CODE: EC/ SUBM DATE: 15Mar65/ ORIG REF: 001/ OTH REF: 002/ ATD Press: 4126

Card 2/2

L 5142-66 EWT(1)/EWT(m)/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/JG/JM
ACCESSION NR: AP5026902 UR/0109/65/010/010/1829/1838
621.385.69

AUTHOR: Borodovskiy, P. A.; Buldygin, A. F. 15

B

TITLE: Investigation of a TW strophotron

SOURCE: Radiotekhnika i elektronika, v. 10, no. 10, 1965, 1829-1838

TOPIC TAGS: TW tube, 15 strophotron

ABSTRACT: A theoretical and experimental study of a strophotron is reported. Fundamental equations that describe a strophotron oscillator are set up as a result of an approximate kinematic analysis. Formulas for the electronic power, efficiency, interaction-space length, etc. are developed. An experimental tube model (75 mm long, 3.6 mm diameter) had constantan reflectors, molybdenum accelerator and collector, and a molybdenum-wire transmission line with an output resistance of 180 ohm; emission current was 10—15 mamp. The tube was tested both as an oscillator and as an amplifier, with the electrons synchronized to the fundamental harmonic of the rf voltage across the reflectors. Starting current vs frequency, output power vs collector current and magnetic field, and output power and frequency vs accelerator-reflector voltage characteristics of the strophotron

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L 5142-66

ACCESSION NR: AP5026902

0

oscillator were plotted, along with gain vs input-signal frequency, gain and bandwidth vs input-signal level, and gain vs collector current characteristics. The oscillation was always associated with a current in the reflector circuit. As an amplifier, the strophotron could operate thanks to a nonuniformity of the rf field along the x-axis, which existed when tower-amplitude electrons were in a stronger rf field than the increasing-amplitude electrons. Orig. art. has: 10 figures and 44 formulas. [03]

ASSOCIATION: none

SUBMITTED: 10Jul64 ENCL: 00 SUB CODE: EC

NO REF SOV: 004 OTHER: 001 ATD PRESS: 4134

Card 2/2 Kd

A Numerical Method for the Solution of Two-Dimensional Diffusion Equations SOV/89-6-3-17/29

typical example (computation of the spatial neutron flux distribution in the reactor). There is 1 table.

SUBMITTED: October 18, 1958

Card 3/3

BULEYEV, N.I.

PHASE I BOOK EXPLOITATION SOV/5297

Akademiya nauk SSSR. Institut prikladnoy geofiziki.

Voprosy dinamicheskoy meteorologii (Problems of Dynamic Meteorology) Moscow, Izd-vo AN SSSR, 1960. 65 p. 1,500 copies printed.

Resp. Ed.: I.A. Kibel', Corresponding Member AS USSR; Eds. of Publishing House: K.P. Gurov and V.G. Berkgaut; Tech. Ed.: Yu.V. Rylina.

PURPOSE: This publication is intended for meteorologists.

COVERAGE: This collection of 4 articles discusses problems in short- and long-range weather forecasting, the theory of climate, transformation of air masses, the effect of free surfaces on the periods of long waves accompanying planetary atmospheric movements, and the theory of quasi-stationary planetary disturbances. All the articles were written between 1950-1953, and each is accompanied by references. A summary of the contents, written by I.A. Kibel', follows the last paper. No personalities are mentioned.

Card 1/2

Problems of Dynamic Meteorology SOV/5297

TABLE OF CONTENTS:

Blinova, Ye.N. On the Problem of Accounting for Air Temperature Transformations in Constructing a Thermohydrodynamic Forecast of Meteorological Elements 3

Blinova, Ye.N. On the Theory of a Long-Range Weather Forecast Which Takes Into Account Vertical Velocities and Variations in the Tropopause Level 12

Musayelyan, Sh. A. Planetary Orographic Waves in the Western Current 21

Buleyev, N.I., and G.I. Marchuk. Effect of Surface Friction on the Evolution of Meteorological Elements in the Free Atmosphere 55

AVAILABLE: Library of Congress (QC880.A43)

Card 2/2

JA/dwm/gmp
7-18-61

S/124/62/000/004/022/030
D251/D301

3,5110

AUTHORS: Buleyev, N. I. and Marchuk, G. I.

TITLE: The numerical solution of the equations of atmosphere dynamics

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 4, 1962, 109, abstract 4B700 (V sb. Nekotoryye probl. meteorol., no.1, M., AN SSSR, 1960, 13-23)

TEXT: A scheme is proposed for the numerical solution of a general system of equations for forecasting the fields of pressure, temperature and vertical currents in the middle strata of the atmosphere (N. I. Buleyev, Tr. Tsentr. in-ta prognozov, 1953). By writing the original system of equations in finite differences, the solution is obtained with the help of a relaxation method which is a combination of the method of factorization and of successive approximations. The forecasting of the fields of temperature and pressure (the vertical velocity at every instant t is determined by fields of temperature and pressure found for the instant t) for each in-

Card (1/5)

terval of time leads to the solution of the finite-difference equations

$$- a_{ik}\varphi_{i-1,k} - c_{ik}\varphi_{i+1,k} = b_{ik}\varphi_{i,k-1} - d_{ik}\varphi_{i,k+1} +$$

$$+ p_{ik}\varphi_{ik} = f_{ik} \qquad (1)$$

where $i = 1,2,\ldots M$, $k = 1,2,\ldots, N$ are the numbers of the intersections in some bounded rectangular region, a_{ik}, c_{ik}, b_{ik}, d_{ik}, p_{ik} are known positive coefficients satisfying the inequality

$$a_{ik} + b_{ik} + c_{ik} + d_{ik} \leqslant p_{ik}$$

The numerical solution ...

S/124/62/000/004/022/030
D251/D301

and the conditions at the limiting intersections of the region $a_{1k} = c_{Mk} = b_{i1} = d_{iN} = 0$. By adding to the right- and left-hand sides of Eq. (1) the expression

$$\varphi_{ik} = r_{ik}\varphi_{i-1,k+1} + s_{ik}\varphi_{i+1,k-1} - \theta_{ik}(r_{ik} + s_{ik})\varphi_{ik}$$

$$0 \leqslant \theta \leqslant 1$$

the finite-difference Eq. (1) of the second order may be replaced by an equivalent system of finite-difference equations of the first order

$$z_{ik} = \alpha_{ik}z_{i-1,k} + \beta_{ik}z_{i,k-1} + \gamma_{ik}\psi_{ik} + \gamma_{ik}f_{ik}$$

$$\varphi_{ik} = \xi_{ik}\varphi_{i+1,k} + \delta_{ik}\varphi_{i,k+1} + z_{ik} \qquad (2)$$

Card 3/5

where Z_{ik} is an auxiliary function, η_{ik}, s_{ik}, d_{ik}, β_{ik}, ε_{ik}, δ_{ik}, γ_{ik} are coefficients which are determined by a_{ik}, b_{ik}, c_{ik}, d_{ik}, and p_{ik}. The system of Eqs. (2) is solved by the method of successive approximations. It is observed that if the sum of the coefficients a_{ik}, b_{ik}, c_{ik}, d_{ik} is little different from p_{ik} then the iteration process converges only for values of θ_{ik} close to zero. Moreover, one iteration by the system (2) is as powerful as 5 - 6 general Liebmann iterations Investigation of the convergence of the iteration process (2) showed that if it is assumed that $\theta_{ik} \approx 0.5$, and to Eq. (2) is added the formula for the general Liebmann iteration, then in that case one iteration will be as powerful as 10 - 12 Liebmann iterations. Estimates are deduced for the evolution of errors in this iteration process and a sufficient criterion of convergence is formulated. The proposed scheme permits the effective solution of the initial dynamic equations both in one stratum and also simultaneously in the whole thickness of the atmosphere. Computation formulae are adduced for forecasting the temperature and pressure fields in different strata of the atmosphere. /‾Abstracter's note: Complete translation._7

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16.6500
16.3500

S/039/60/051/002/003/005
C111/C333

AUTHOR: Buleyev, N.I. (Moscow)

TITLE: Numerical method for the solution of two and three-dimensional diffusion equations

PERIODICAL: Matematicheskiy sbornik, v. 51, no. 2, 1960, 227-238

TEXT: Several stationary diffusion processes lead to differential equations

$$\frac{\partial}{\partial x} A \frac{\partial V}{\partial x} + \frac{\partial}{\partial y} A \frac{\partial V}{\partial y} - CV + F = 0 \qquad (1.1)$$

with linear boundary conditions on the contour:

$$m_1 \frac{\partial V}{\partial n} + m_2 V = S \qquad (1.2)$$

and the conditions on the boundary between different media

$$\left[V\right] = 0 \qquad (1.3)$$

$$\left[A \frac{\partial V}{\partial n}\right] = 0. \qquad (1.4)$$

Here A, C, F, m_1, m_2, S are certain piecewise continuous functions of the

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independent variables x,y; A and C are everywhere positive; the symbol $[f]$ denotes the difference of the values f on different sides of the surface; n is the surface normal.
If instead of the derivatives there are introduced differences, then one obtains a system of difference equations

$$-a_{ik}V_{i-1,k}-c_{ik}V_{i+1,k}-b_{ik}V_{i,k-1}-d_{ik}V_{i,k+1}+p_{ik}V_{ik} = f_{ik}, \qquad (3.1)$$

where in all nodes of the domain it holds

$$a_{ik}+b_{ik}+c_{ik}+d_{ik} \leqslant p_{ik}. \qquad (3.2)$$

Since (3.1) is written under consideration of the boundary conditions, let

$$a_{1k}=c_{Mk}=b_{i1}=d_{iN}= 0. \qquad (3.3)$$

In order to reduce (3.1) to a system of difference equations of first order, the author adds

$$\psi_{ik}= r_{ik}V_{i-1,k+1}+s_{ik}V_{i+1,k-1}-\theta_{ik}(r_{ik}+s_{ik})V_{ik} \qquad (3.4)$$

Card 2/5

on the right and on the left side in (3.1), where $0 \leq \theta_{ik} < 1$ are fixed and r_{ik}, s_{ik} are arbitrary. He obtains

$$\begin{aligned}&-a_{ik}V_{i-1,k}-c_{ik}V_{i+1,k}-b_{ik}V_{i,k-1}-d_{ik}V_{i,k+1}+\\&+(p_{ik}-\theta_{ik}r_{ik}-\theta_{ik}s_{ik})V_{ik}+r_{ik}V_{i-1,k+1}+s_{ik}V_{i+1,k-1}=F_{ik}\,,\end{aligned}\qquad(3.5)$$

where

$$F_{ik}=f_{ik}+\Psi_{ik}. \qquad (3.6)$$

The difference equation (3.5) is replaced by the equivalent system

$$\left.\begin{aligned}Z_{ik}&=\alpha_{ik}Z_{i-1,k}+\beta_{ik}Z_{i,k-1}+\gamma_{ik}F_{ik},\\V_{ik}&=\xi_{ik}V_{i+1,k}+\delta_{ik}V_{i,k+1}+Z_{ik},\end{aligned}\right\}\qquad(3.7)$$

where α_{ik}, β_{ik}, ξ_{ik}, δ_{ik}, γ_{ik} are unknown coefficients. For their determination the second equation (3.7) is solved for Z_{ik}, and Z_{ik} is

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Numerical method for the solution... S/039/60/051/002/003/005
C111/C333

substituted into the first equation. A comparison of the arising equation with (3.5) shows

$$\alpha_{ik} = a_{ik}\gamma_{ik}, \quad \beta_{ik} = b_{ik}\gamma_{ik}, \quad \xi_{ik} = c_{ik}\gamma_{ik}, \quad \delta_{ik} = d_{ik}\gamma_{ik}, \qquad (3.9)$$

$$\alpha_{ik}\delta_{i-1,k} = r_{ik}\gamma_{ik}, \quad \beta_{ik}\xi_{i,k-1} = s_{ik}\gamma_{ik}, \qquad (3.10)$$

$$\gamma_{ik} = \frac{1}{p_{ik} - a_{ik}(c_{i-1,k} + \theta_{ik}d_{i-1,k})\gamma_{i-1,k} - b_{ik}(d_{i,k-1} + \theta_{ik}c_{i,k-1})\gamma_{i,k-1}} \qquad (3.12)$$

The equations (3.7) are written, under consideration of (3.6) and (3.10), in the form

$$\left.\begin{array}{l} Z_{ik} = \alpha_{ik}Z_{i-1,k} + \beta_{ik}Z_{i,k-1} + \varphi_{ik} + \gamma_{ik}f_{ik}, \\ V_{ik} = \xi_{ik}V_{i+1,k} + \delta_{ik}V_{i,k+1} + Z_{ik}, \end{array}\right\} \qquad (3.13)$$

where $\varphi_{ik} = \mu_{ik}V_{i-1,k+1} + \nu_{ik}V_{i+1,k-1} - \theta_{ik}(\mu+\nu)_{ik}V_{ik}$, $\mu_{ik} = \alpha_{ik}\delta_{i-1,k}$, $\nu_{ik} = \beta_{ik}\xi_{i,k-1}$. The system (3.13) is solved by successive approximation.

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Numerical method for the solution... S/039/60/051/002/003/005
C111/C333

If $\Theta_{ik} \approx 0.5$ is substituted into (3.12) and (3.13), and if the system (3.13) is completed by the usual iteration formula

$$p_{ik}V_{ik} = a_{ik}V_{i-1,k} + c_{ik}V_{i+1,k} + b_{ik}V_{i,k-1} + d_{ik}V_{i,k+1} + f_{ik}, \qquad (1.5)$$

then one obtains the iteration process

$$\left.\begin{aligned} Z_{ik} &= \alpha_{ik}Z_{i-1,k} + \beta_{ik}Z_{i,k-1} + \varphi_{ik} + \gamma_{ik}f_{ik}, \\ W_{ik} &= \xi_{ik}W_{i+1,k} + \delta_{ik}W_{i,k+1} + Z_{ik}, \\ V_{ik} &= \frac{1}{p_{ik}\gamma_{ik}}(\alpha_{ik}W_{i-1,k} + \beta_{ik}W_{i,k-1} + \xi_{ik}W_{i+1,k} + \delta_{ik}W_{i,k+1} + \gamma_{ik}f_{ik}) \end{aligned}\right\} \qquad (3.15)$$

which is denoted to be very effective: an iteration (3.15) is equivalent to 10 - 12 iterations (1.5).
The described method is extended to three-dimensional equations of elliptic type.
The author mentions: M.V.Keldysh, I.M.Gel'fand, O.V.Lokutsiyevskiy, K.I.Babenko, N.N.Chentsov, S.M.Yermakov and G.I.Marchuk. There are 2 Soviet-bloc references.

SUBMITTED: October 14, 1958

Card 5/5

21.4210

22819
S/170/61/004/005/002/015
B104/B205

AUTHORS: Buleyev, N. I., Vvedenskiy, V. N., Nakhutin, I. Ye., Pyshin, V. K.

TITLE: Calculation of the temperature and the adsorptive capacity of an adsorbent with internal sources of heat

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 5, 1961, 8-11

TEXT: The effect of dissipation of radioactive radiation on the temperature and capacity of an adsorbent has been studied. A gas containing a radioactive component is blown through a tube of radius r_0 and length z_0 along the axis. The tube is filled with a granular adsorbent. The authors attempted to determine the capacity of the adsorbent under steady conditions. Therefore, it is obviously necessary to find the temperature distribution in the adsorbent as a function of r and z. This temperature distribution is expressed by the differential equation

$$\lambda\left(\frac{\partial^2 t}{\partial r^2} + \frac{1}{r}\frac{\partial t}{\partial r} + \frac{\partial^2 t}{\partial z^2}\right) - GC_p\frac{\partial t}{\partial z} = -g(t) \quad (1),$$

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Calculation of the temperature and the... S/170/61/004/005/002/015
B104/B205

where λ is the effective coefficient of thermal conductivity of the granular adsorbent in the gas concerned, C_p the specific heat of the gas, g the density of the internal sources of heat, and G the weight of the gas passing through the tube per unit time. g(t) is proportional to the amount q(t) of radioactive gas adsorbed per unit volume at temperature t, and is proportional to the mean energy E of one decay and inversely proportional to half-life T: $g = 0.69\,nq(t)E/T$, where n is the Loschmidt number. q(t) can be expressed by the empirical relation $q(t) = q(t_0)\exp\{-k(t-t_0)\}$. k depends on the partial pressure p of the radioactive component but not on temperature. If $z_0/r_0 \gg 1$ and if the heat transport through the gas stream is much larger than the heat transport effected by heat conduction along z, i.e., if the term $\lambda\partial^2 t/\partial z^2$ in (1) is negligible, then it is possible to represent (1) in the form

$$\partial^2\tau/\partial\varrho^2 + \frac{1}{\varrho}\,\partial\tau/\partial\varrho - \beta\partial\tau/\partial\xi = -\gamma\exp(-\tau) \qquad (5)$$

after introduction of the variables $\varrho = r/r_0$, $\xi = z/r_0$, and $\tau = k(t-t_0)$.

Card 2/5

(5) is solved with the following boundary conditions:

$$\tau_{\xi=0} = 0,\ (\partial\tau/\partial\rho)_{\rho=0} = 0,\ (\partial\tau/\partial\rho)_{\rho=1} = -\alpha r_0\tau/\lambda = -\delta\tau \quad (8.2),$$

where α is the heat-exchange coefficient at the boundary between the adsorbent and the wall of the tube. If $\beta = 0$, Eq. (5) can be represented in the form

$$\tau'' + \tau'/\rho = -\gamma\exp(-\tau) \quad (9).$$

The solution of this equation reads: $\tau = 2\ln(\gamma_1\rho^{h_1} + \gamma_2\rho^{h_2}) - \ln W$ (10), where γ_1 and γ_2 are constants, and $h_{1,2}$ are roots of the equation $h^2 - 2h + c/2 = 0$. It is shown that h_1 or h_2 must be equal to zero and $c = 0$. Thus, one obtains

$$\tau = 2\ln(\gamma_1 + \gamma_2\rho^2) - \ln(\gamma_1\gamma_2/-\gamma) = \ln\left[-\frac{\gamma}{8}\left(\sqrt{\gamma_1/\gamma_2} + \rho^2\sqrt{\gamma_2/\gamma_1}\right)^2\right]. \quad (12)$$

Hence, the solution depends only on γ, since γ_1/γ_2 can be determined from the condition (8.2): $f \doteq \gamma_1/\gamma_2 = -(4/\gamma + 1) - \sqrt{16/\gamma^2 + 8/\gamma}$ (13), wherefrom it follows that $\tau = \ln(f+\rho^2)^2/(f+1)^2$. When $\tau = F(\rho)$ is found, also the adsorptive capacity can be easily calculated:

$$Q = 2\pi r_0^2 z_0 q(t_0) \int_0^1 \frac{(f+1)^2}{(f+\rho^2)^2} \rho \, d\rho = Q_0 \left(1 + \frac{1}{f}\right). \qquad (17)$$

In general, Eq. (5) cannot be solved by quadratures, and numerical methods are applied instead. Such calculations have been made, and Fig. 2 shows the solutions obtained for three different values of γ. This figure illustrates the effect of the gas stream on temperature: In the initial part τ is notably smaller than at a certain distance from the inlet. From a certain value of $\xi = z/r_0$ onward τ may be assumed to equal the reduced temperature which holds for an infinitely extended cross section and is obtained from (14). There are 2 figures and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc.

SUBMITTED: October 3, 1960

BULEYEV, N. I.

"Some problems of heat transfer in liquid-cooled reactors."

report presented at the 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

Physical Energetics Inst, USSR State Atomic Energy Comm

L 10715-65 EWT(l)/EWP(m)/EPF(c)/EPF(n)-2/EPR/T/EPA(bb)-2/FCS(k)/EWA(l)
Pd-4/Pr-4/Ps-4/Pu-4 ESD(t)/AEDC(a)/SSD/AFWL/ASD(f)-2/AEDC(b)/ASD(d)/
ASD(p)-3/AFTC(a)/BSD WW

ACCESSION NR: AP4047380 S/0294/64/002/005/0749/0757

AUTHORS: Buleyev, N. I. (Moscow); Polosukhina, K. N. (Moscow); Py*shin, V. K. (Moscow)

TITLE: Hydraulic resistance and heat transfer in turbulent fluid flow in a grid of bars

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 5, 1964, 749-757

TOPIC TAGS: heat exchange, nuclear reactor, turbulent flow, fluid velocity vector, temperature gradient

ABSTRACT: The authors solved the basic equations of motion and energy of a fluid stream in a bar grid such as the grids used for heat distribution in certain nuclear reactor types. Use was made of simplified expressions for the coefficients of turbulent viscosity and temperature conduction developed previously by N. I. Buleyev (V sb. "Voprosy* teploobmena", Izd-vo AN SSSR, 1959). Consideration was made of grid bars arranged in both triangular and square fashion. The authors first derived a means of computing the flow velocity field by considering the flow in a single grid cell. Tabulated values of the velocity vector were given for selected parametric conditions describing grid geometry and liquid state. A relief-type diagram of the relative velocity field is shown for a typical parameter setting.

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ACCESSION NR: AP4047380

Plots are presented showing the manner of variation of the resistance coefficient with Reynolds number for a variety of grid and flow arrangements. By considering the grids as heat sources, the authors derived expressions for computing the heat field for grids. Tabulations of temperature field values are presented for both grid arrangements; four parameters are varied in the tabulations. Variations of Nusselt's number with Reynolds number as well as variations of temperature profile along the bar perimeter were compared with experimental model results (Atomnaya energiya, 9, v. 6, 1960 and 13, v. 12, 1962) obtained by V. I. Subbotin, P. A. Ushakov, B. N. Gabrianovich, A. V. Zhukov, V. D. Talanov, and I. P. Sviridenko. Orig. art. has: 7 figures, 4 tables, and 28 equations.

ASSOCIATION: none

SUBMITTED: 10Jun63

ENCL: 00

SUB CODE: ME

NO REF SOV: 006

OTHER: 001

Card 2/2

BULGAKOV, Aleksandr Aleksandrovich; SEMENOV, S.M., red.; ZAYTSEVA, L.A., tekhn. red.

[Improve the style of trade-union work]Sovershenstvovat' stil profsoiuznoi raboty. Moskva, Profizdat, 1962. 69 p. (Bibliotechka profsoiuznogo aktivista, no.22(46)) (MIRA 15:12)
(Trade unions)

BULGAKOV, A.

Important event in the life of Soviet trade unions. Sov. profsoiuzy 19 no.17:1-4 S '63. (MIRA 16:11)

1. Sekretar' Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov.

PROCESSES AND PROPERTIES INDEX

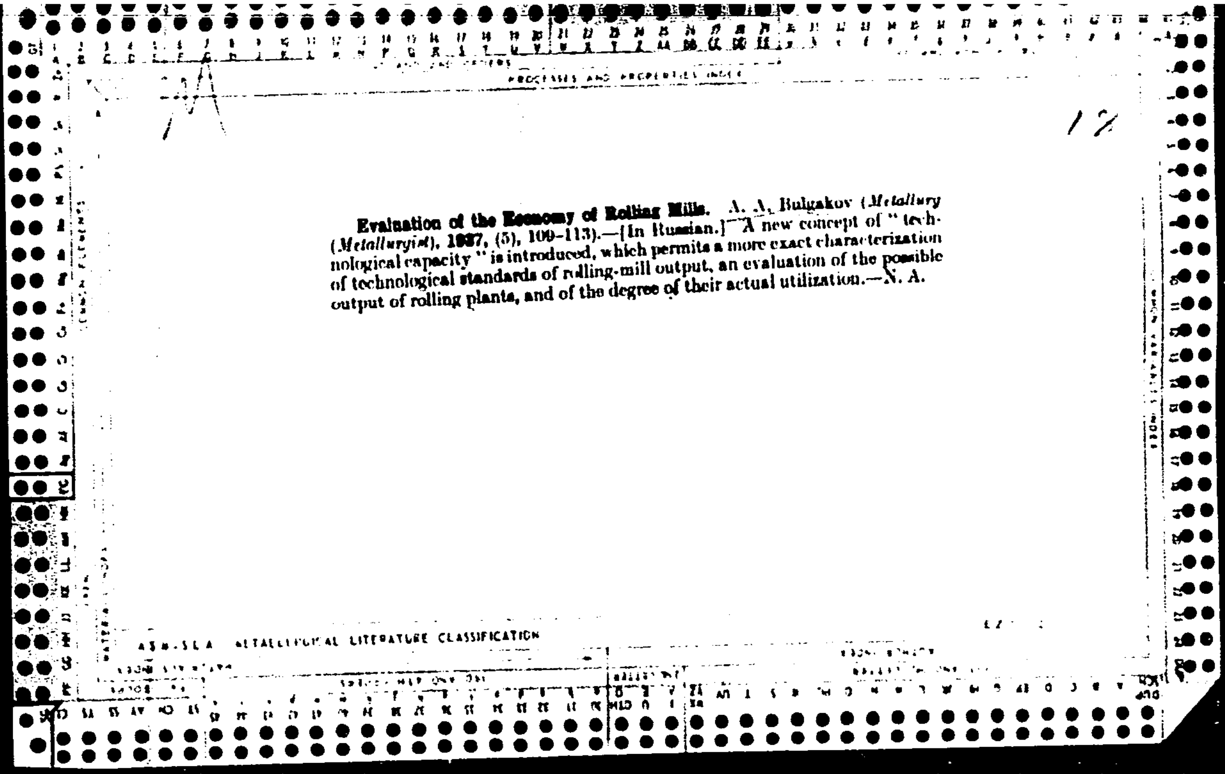
Iron-pipe industry at the plants of U. S. and U. S. S. R. A. A. Bulgakov. *Domez* 1932, No. 4 5, 33 46.—A review. S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BULGAKOV, A. A.

"Automatic Control of Rolling-mill Pressure Devices," Vestnik Elektropromyshlennosti, 1936, No. 1, and also No. 2

"Electronic Autoregulators for the Control of Electric Drives," 1946, Vestnik Inzhenerov i Tekhnikov, No. 3



PROCESSES AND PROPERTIES INDEX

12

Evaluation of the Economy of Rolling Mills. A. A. Bulgakov (*Metallurg* (*Metallurgist*), 1937, (5), 109–113).—[In Russian.] A new concept of "technological capacity" is introduced, which permits a more exact characterization of technological standards of rolling-mill output, an evaluation of the possible output of rolling plants, and of the degree of their actual utilization.—N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Miscellaneous.

[illegible] ON OPERATIONAL SOLUTIONS OF SYSTEMS OF LINEAR DIFFERENTIAL EQUATIONS WITH CONSTANT COEFFICIENTS (AS ENCOUNTERED IN PROBLEMS OF AUTOMATIC CONTROL).—Bulgakov. (*Comptes Rendus (Doklady) de l'Ac. des Sci. de l'URSS*, 30th Nov. 1944, Vol. 45, No. 6, pp. 234-238: in English.) See also 1020 of 1944.

BULGAKOV, A. A.

PA 24T10

USSR/Electricity
Thyratrons
Controls, Electric

Jul/Aug 1947

"Electric Equipment with Thyratron Control," G. N. Alyab'eva, A. A. Bulgakov, 11 pp

"Avtomatika i Telemekhanika" Vol VIII, No 4

A review of the main stages of development of automatic control of direct current electric equipment. Discusses the structute, principle of operation, and basic functions of the automatic control system.

PA 24T10

Bulgakov, A.A.

2

Bulgakov, A. A. The dynamics of contact synchronization of electrical drives. Avtomatika i Telemehanika 8, 108–116 (1947). (Russian)

Investigation of a contact phase synchronization scheme suitable for fractional horsepower motors. The dynamics of the regulation are investigated semi-analytically: condition for stability and transient behaviour. *H. G. Baerwald.*

Source: Mathematical Reviews, Vol 12, No. 3.

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

SA

B 64

310

Structure and characteristics of modern automatic d.c. drive installations. BULGAKOV, A. A. *Elektrichestvo* (*No.* 4) 14-21 (1947) *In Russian.*—A general survey of automatic d.c. drives, as required for reversible operation in rolling steel mills, is given under 3 groups: Systems with electromagnetic amplifiers, systems with electromechanical amplifiers (amplidynes) and those with electronic amplifiers (thyratrons). Comparative characteristics of speed, acceleration and regulation are described, and applications of feedback to servomechanisms discussed. A. L.

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ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BULGAKOV, A. A.

PA 75T36

USSR/Electronics
Regulators, Electronic
Circuits, Electronic

Jan 1948

"Electronic Instrument for Automatic Control of Machinery by Power Regulation," A. A. Bulgakov, Cand Tech Sci, and G. N. Alyab'yeva, Engr, 6¼ pp

"Stanki i Instrument" No 1

Describes electron-thratron power supply for machinery and circuits used in automatic regulation. Method described can be applied to all types of machines. Circuits are based on the feed-back principle, which greatly facilitates regulating operation.

LC

75T36

PA 38/49T24

Mar 49

USSR/Electricity
Drives, Electric
Rectifiers

"Theory of Work of the Ionic Electric Drive in Region of Intermittent Current," A. A. Bulgakov, Cand Tech Sci, Inst of Automatics and Telemech, Acad Sci USSR, 8 pp

"Elektrichestvo" No 3

Discusses theory and method of computation based on universal diagrams of relative units for widely used ionic electric drive with small number of phases in field of intermittent currents in the circuit of a controllable rectifier

[redacted]

38/49T24

Mar 49

USSR/Electricity (Contd)

Gives diagrams of current impulses and mechanical characteristics of the drive. Includes 13 analytical diagrams.

38/49T24

BULGAKOV, A. A.

[redacted]

FA 151T16

USSR/Engineering - Electrical Drive Sep/Oct 49

"History of the Development of Soviet Electric Drive," A. A. Bulgakov, Inst of Automatics and Telemech, Acad Sci USSR, 5 pp

"Avtomat i Telemekh" Vol X, No 5

Discusses electrical drive in prerevolutionary Russia, industrial electrical drive in period of recovery, industrialization of public economy in USSR, development of theory of electrical drive, and USSR technology of electrical drive.

[redacted]

151T16

BULGAKOV, A. A.

"Performance of Ionic Electric Wire in the Sphere of Pulsating Currents," Sum. of Soviet Periodicals, No. 19, July 1949.

"The Geometry of Electro-magnetic Systems," Dok. AN, 66, No. 1, 1949

Bulgakov, A.A.

Bulgakov, A. A. **On the geometry of electromagnetic systems.** Doklady Akad. Nauk SSSR (N.S.) 66, 63-65 (1949). (Russian)

The voltages and currents in a system of *n* fixed magnetically coupled coils are interpreted geometrically in terms of the motion of a point in a configuration space.

E. N. Gilbert (Murray Hill, N. J.).

Source: Mathematical Reviews, Vol 10, No. 10

LFH

BULGAKOV, A.A.

Mar/Apr 49

USSR/Electricity
Circuits, Resistance
Current Regulators

"Ionic Apparatus as a Controllable Resistance in an AC Circuit," A. A. Bulgakov, Inst of Automatics and Telemech, Acad Sci USSR, 12½ pp

"Avtomat i Telemekh" Vol X, No 2

Discusses several problems in the theory of ionic apparatus functioning as controllable resistances in AC circuits. Analyzes conditions governing commutation and regulation of the circuit current. Gives equations to determine current

41/49T11

Mar/Apr 49

USSR/Electricity (Contd)

and dependence upon angle of ignition in the closed form by means of harmonic components. Indicates practical methods of calculating the circuit. Illustrates conclusions by calculated graphs.

41/49T11

PROCESSES AND PROPERTIES INDEX

GTRSPL, Vol. 3, No. 1

Elec Eng

Bulgakov, A.A. and Alymb'eva, G.N., Transmission function of an amplifier with inverse feedback consisting of identical cascades, 689-91.

Akademiya Nauk, S.S.S.R., Doklady, Vol. 68, No. 4, (Oct. 1, '49)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BULGAKEV, A. A.

PA 66/49T35

USSR/Engineering - Regulators,
Electronic
Motors, Electric

Aug 49

"The Theory and Design of Induction Bridge Phase Regulators," A. A. Bulgakev, Cand Tech Sci, Inst of Automatics and Telemech, Acad Sci USSR, 3 pp

"Elektrichestvo" No 8

Examines theory of bridge phase regulators with varying inductance in the arm of the bridge, used widely for grid control of ionic rectifiers, particularly in electric-motor drives. Gives mathematical derivation for parameters necessary for achieving maximum phase shift and constant voltage in diagonal.

[redacted] 66/49T35

BULGAKOV, A. A.

"Electronic Device for Automatic Control of Electrical Drives of Machines," with G. N. ALYABIYEVE, published in Machine Tools and Instruments No. 9, Sep. 1950.

USSR/Physics - Servo, Transfer 11 Sep 50
Function
Feedback

"Transfer Function of a Multistage Amplifier With Feedback," A. A. Bulgakov

"Dok Ak Nauk SSSR" Vol LXXIV, No 2, pp 241, 242

Reconsiders transfer function Q(p) of amplifier consisting of n different stage, first discussed by author and G. N. Alyab'yeva in "Dok Ak Nauk SSSR," Vol LXVIII, No 4, 1949.

PA 174T66

[redacted]

174T66

USSR/Physics - Servo, Transfer 11 Sep 50
Function
(Contd)

Finds new analytical expressions for static coeff q of Q(p). Submitted 20 Jun 50 by Acad V. S. Kulebakin.

[redacted]

174T66

BULGAKOV, A.A

C0000050

PHASE I Treasure Island Bibliographic Report

Call No.: AF546094

BOOK

Author: BULGAKOV, A.A.
Full Title: ELECTRONIC DEVICES FOR AUTOMATIC CONTROL
Transliterated Title: Elektronnye ustroystva avtomaticheskogo upravleniya

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Assisted in writing the book: A.V. Alyab'yeva and B.S. Khramoy

Text Data

Coverage: The book considers electrical devices for automatic control and regulation of plant operation and technological processes. The principles of construction and action of typical systems and their elements are illustrated with experimental and calculated characteristics. The practical uses of the electronic devices in various branches of industry are given as examples.

Purpose: The book is intended for engineers dealing with automatization of industry and for students specializing in automatic control problems.

Card 2/2

Full Title: ELECTRONIC DEVICES FOR AUTOMATIC CONTROL Call No.: AF546094 C0000050

Facilities: Magnitogorsk Plant (staff under the leadership of K.I. Burtsev), Makeev Plant and other metallurgical plants. Also V.D. Mironov, N.I. Davydov and E.P. Stefani of the All-Union Heat Engineering Institute im. F.E. Dzerzhinskiy (VTI), and the Institute of Electronics of the Academy of Sciences of the Ukrainian SSR.

No. Russian and Slavic References: 75.

Available: A.I.D., Library of Congress.

BULGAKOV, A.A.

Calculation of transient processes in circuits with controlled rectifiers.
Elektrichestvo '53, No.4, 29-34. (MLRA 6:4)
(EEA 56 no.672:4756 '53)

Examines control of ionic rectifier operating in same system with phase-control unit for an arbitrary variation of input signal and a complex load on the rectifier output. Derives expressions for calcg transient processes in complex (especially closed) controlled-rectifier circuits. Cites equivalent circuit (replacing rectifier with phase-control equipment) facilitating calcn and structural analysis of complex control circuits. Submitted 9 Oct 52. 258T26

BULGAKOV, A.A.; KULEBAKIN, V.S., akademik, redaktor; PETROVA, K.M.,
redaktor; SOKOLOVA, T.R., tekhnicheskiy redaktor

[Frequency control of asynchronous electric motors] Chastotnoe
upravlenie asinkhronnymi elektrodvigateliami. Moskva, Izd-vo Akademii
nauk SSSR, 1955. 215 p. (MLRA 8:3)
(Electric motors, Induction)

[illegible]kov, A. A.

1177 [illegible] LAW OF ECONOMIC [illegible] MACHINES. A. A. [illegible]gakov. Elektrichestvo, ~~1956, No. 10~~, 29-32. In Russian.

The law refers to the conditions of minimum losses obtained under any given loading conditions and speed variations. These conditions are that the flux should always be so controlled that it is proportional to the square root of the torque, this [illegible] ing the voltage in the main circuit [illegible]

[illegible] reduce temperature rises, so increasing the effi[illegible] of the machine. In the case of d.c. and asynchronous [illegible]

Inst Automatics & Telemechanics, AS [illegible]